Pragma's

product profiles

Issue #32 — The *free* newspaper for Pick™ operating system users. — February 11, 1987

This month's mailbag

Knowing when to input

In *Product Profiles #15*, you expressed concern that even the availability of the `SYSTEM(14)` function prevents you from knowing if a carriage return has been typed, which means `INPUT var` still can't be used instead of executing `INPUT var,1` over and over. A simple solution to avoid hanging while inputting more than one character is to use `INPUT var,SYSTEM(14)`. That will input the number of characters in the buffer without need for a carriage return.

Jim Taylor
Orem, UT

Although `INPUT var,SYSTEM(14)` will return everything waiting in the input buffer, you still can't tell if the user is actually done typing.

We originally thought carriage return detection would be a nice way to avoid having to collect input byte-by-byte in certain cases. For example, let's say we're writing code that waits up to 30 seconds for the user to type a text string delimited by a carriage return. If there were a function, say `SYSTEM(99)`, that was true if a carriage return is somewhere in the input buffer, then we could write:

```
GOT.INPUT = 0
WAIT.START = TIME()
LOOP
 IF SYSTEM(99) THEN
  INPUT TEXT
  GOT.INPUT = 1
  END
UNTIL GOT.INPUT OR
 ((TIME()-WAIT.START)
  > 30) DO
REPEAT
```

Actually, the same thing can be accomplished using `SYSTEM(14)` without that much difficulty. For example:

```
TEXT = ""
RET = CHAR(13)
WAIT.START = TIME()
LOOP
 IF SYSTEM(14)>0 THEN
  INPUT BYTE,1:
   ELSE BYTE = ""
UNTIL (BYTE=RET) OR
 ((TIME()-WAIT.START)
  > 30) DO
  TEXT = TEXT : BYTE
REPEAT
```

The real problem with all

Pragma's Product Profiles is published periodically by Semaphore Corporation, 207 Granada Drive, Aptos, CA 95003, (408) 688-9200.

Entire contents copyright © 1987 by Semaphore Corporation. All rights reserved. No part of this publication may be reproduced in any form or by any means without prior written permission from Semaphore. Semaphore offers no warranty, either express or implied, for any losses due to the use of any material published.

Subscriptions are free, but are available only to Pick users with USA mailing addresses.

All material received will be considered for publication. Semaphore reserves the right to edit all submittals.

Semaphore cannot be responsible for lost issues or issues returned to us because of address changes.

Pick is a trademark of Pick Systems. Semaphore Corporation and its publications are not affiliated with Pick Systems.

Does Your Mailing Label Say RENEW?

If so, your subscription is about to EXPIRE!

To avoid missing your next free issue of *Product Profiles*, renew IMMEDIATELY by filling out and returning the adjacent coupon for a free subscription!

The last two digits of your mailing label number indicate the number of the last issue you'll receive.

Pragma's Product Profiles is completely FREE!

Name _____

Company _____

Address _____

City/State _____ ZIP _____

Telephone _____

I use the Pick operating system and my mailing address is in the USA. Please continue sending me *Pragma's Product Profiles* free of charge.

Signature _____ Date _____

Return this form to:
Pragma • 207 Granada Drive • Aptos, CA 95003

Pragma's Product Profiles
207 Granada Drive
Aptos, CA 95003

BULK RATE
U.S. POSTAGE
PAID
APTOS, CA 95003
Permit No. 67

Address Correction Requested

of the above code is that a tremendous amount of CPU time is wasted while the program just loops waiting for input, which quickly bogs down other ports. As we've reported in the past, we were surprised how overall system throughput was even worse when we inserted RQM statements in the LOOPs. On our Zebras, it turns out RQM compiles to SLEEP statements that cause disk I/O. The correct way to force a "real" quantum release is to use the SYSTEM(13) function! But wouldn't it be nice just to be able to write something like INPUT TEXT WAIT 30?

We also don't like the proliferation of magic numbers for the SYSTEM function. Pick BASIC would read easier if it used more function names, instead of just allowing more numeric arguments in SYSTEM calls. Wouldn't you rather see code that said WIDTH(), LINES(), STON() and PORT() instead of SYSTEM(2), SYSTEM(4), SYSTEM(10) and SYSTEM(18)?
- Editors

More on speeding up code

Following on your "Coding for speed" article in *Product Profiles #21*, I timed MATREAD, READ, READV, and OCONV(Tfile). The implicit OPEN and READV in an OCONV seems appalling from a systems design and documentation point of view, but the timings were so favorable I can no longer ignore the capability, particularly for densely integrated systems in which one is retrieving bits and pieces from 8 to 12 files.

Hands down, my results favored the READV, then the READ, but the MATREAD and OCONV ended in a near dead heat. With the allowance for OPENing for reading, which one does not do for the OCONV, it is very surprising the MATREAD performed so poorly.

I am a bit embarrassed to conclude that the seemingly least efficient and least recommended technique performed no worse than the seemingly most efficient technique. I would like to hear if those folks responsible for the folklore you quoted were merely assuming that MATREAD would be preferred on the basis of non-Pick experience, or whether new releases on new machines have just not been explored.

Archie M. Andrews
Alexandria, VA

As we described in that article, a MATREAD is better than a READ if you subsequently manipulate a lot of attributes to make up for the slower MATREAD, since accessing an attribute from a dimensioned array is faster than accessing an attribute from an undimensioned dynamic array. A READ X followed almost immediately by a WRITE X might as well be left alone. But a READ X followed by a few thousand executions of Y = X<I> should be changed to a DIM, a MATREAD, and Y = X(I) if you want to see a speed increase.
- Editors

Pick doesn't like our analysis

I have had the opportunity to recently review the September 30th issue of *Product Profiles* and your self-interview. I found some of the views expressed therein to be somewhat misleading as to the makeup and size of the Pick marketplace.

In your comparison of Macintosh vs. Pick circulation for your periodicals, you fail to take into consideration that Pick and Apple address different markets. The former is in the real world business environment and thus not always interested in techie info. The latter appeals to techie types in specialized markets.

Just because you cannot identify every Pick user doesn't mean that they are not there. These users are businesses who utilize the Pick operating system for a definite purpose and not as a technical toy. Over 90% of the users could care less about the internals of the operating system. What they require is that the system and the application provide them with the tools that help manage their businesses. You yourself identified this fact in your interview. The typical end-user is the owner or manager responsible for the data processing needs of his or her company. The days of Pick being a techie cult are long since past. You have failed to recognize this change in your assessment of the Pick market. Also, you are trying to stereotype the user as a DOS techie. He is in fact a businessperson.

The Pick operating system for the most part is basically the same for all hardware. Product differentiation is not new to any market. An application is still portable to all Pick hardware. The Standards Committee is working to insure that portability remains, and the Pick licensee organization is committed to standards.

Comparing the Pick operating system with Apple's operating system is unfair. Pick is a much more sophisticated operating system. All licensees release periodic updates. Pick Systems itself is readying the next major release of the Pick System, Open Architecture. We are confident that this new version of Pick will gain widespread market acceptance. The initial release will be followed by periodic releases as new features are added. An operating system is not something you throw together and say here it is. The amount of resources in both dollars and personnel is enormous. Analysis of market demand and end-user input is critical to development. The complexities involved in incorporating new features require time consuming effort in both implementation and testing.

Pick licensees do know who purchases their product since they are required to submit license agreements. They in turn treat these confidentially as does Pick Systems. The listings are not released for solicitation purposes to anyone. Because you cannot gain access to a genuine data base, it is unfair

WE SPECIALIZE IN USED

Microdata™ Systems & Upgrades

Reality	Sequel M9000
128 MB Reflex II	IMB Memory
50 MB Reflex I	ACLC
128 K Mos Memory	Disc Drives
Intelligent 8-Ways	Controllers
Tape Drives	Complete Systems
Complete Systems	

BUY
SELL
TRADE

Call CHUCK HAAS
For Competitive Prices

1-800-634-USED

EASTCOMP II INC.

513-528-5400
IN OHIO

to blame the dealers, licensees, or Pick Systems.

In conclusion I will only say that the Pick market passed you by. While you were trying to fit the Pick user into your mold of a "typical micro user" who has hours to play in DOS, he went the route of managing his business where results count. Pick is a business solution, not a programmer's toy. The markets are totally different.

Don't lose heart. There are thousands of Apple users who would undoubtedly pay for a hackers newsletter. You have identified this market niche and can fulfill a demand. But don't confuse all markets as identical.

Frank Petyak
Worldwide Sales Director
Pick Systems

We disagree with much of your letter. Here are our arguments, our paragraphs for your paragraphs.

First of all, Semaphore knows quite well that Pick and Apple don't compete in the same market. However, Pick and Apple do both compete for Semaphore's attention, because we publish periodicals and software products in both markets. In that respect, Pick has not done well. As we reported, Pick impresses us as a relatively stagnant, fragmented market with comparatively slow growth. We just see it as a simple fact that the more a software house like ourselves becomes involved with non-Pick markets, the more Pick looks unattractive. You're also overly concerned and somewhat misled about the role of "techies". Don't underestimate the need for technical information among Pick users. Even the most canned, turnkey installations need and want information about modulos, correlatives, and such, in order to effectively use their Pick machines. And don't overestimate the techies and hackers in the Apple market. Our own tracking of subscribers to our Macintosh newspaper reveals that almost exactly half of our readers are using their Macs for business applications. You would be surprised at the number of Pick sites that also use Apple machines. We've also never found it necessary to publish any code or technical articles for Mac users. Our Apple publication tends to stay on a much higher level of discussion than our Pick publication.

Sure there are more users out there than can be identified, but what good is that? Vendors can't sell to users they can't find. No matter what Pick's real growth is, if there isn't an economical way to find the users, we don't care if there are a hundred or a million. What difference does it make what the numbers are, if no one can reach them? As for how we "stereotype" users, we find four classes of people at Pick sites: (1) data processing managers, (2) programmers, (3) hands-on terminal users, and (4) vice presidents, department heads, and other managers and employees who depend on the first three groups, but don't really care what hardware and software they use to produce results. While the first two groups are usually the people most interested in developments in the Pick market, we're comfortable with the fact that

Tired of waiting for your Pick™ computer to SORT or SELECT your large data files?

Need to quickly find *any* attribute? Want to scroll files up *or* down, in any sort order?

Now you can use B-TREE-P to instantly search, sort, and scroll any data from any Pick file!

Now you can instantly look up customers by name, street, Zip code, or any other field — not just by customer number. Now you can immediately find inventory entries by quantity, cost, or description — not just by part number. Whatever files you use, now you can instantly locate and display your data *any way you want,* without having to wait for endless SORTs and SELECTs.

- Immediately display any record in any file just by typing one or more starting characters that match *any* field in the record.
- You can display not only a selected record, but also any previous and next records, using *any* sort order you specify.
- You can jump to any record in a file at any time, then browse through the file by scrolling up *or* down, a record at a time, or a page at a time, in *any* sort order.

Ask us for a free copy of Product Profiles #24, describing how B-TREE-P was originally developed and put to work. As one of Semaphore's programmers says: "We often ask ourselves why we waited so long to create B-TREE-P. After using it for our own production work, we wonder how we ever got by before without it. A Pick computer without B-TREE-P is like a car without wheels".

B-TREE-P is a proven collection of BASIC subprograms for using B-trees on Pick computer systems. B-trees allow any of the data in any of your Pick files to be instantly located and displayed in any sort order, without having to wait for SORT or SELECT commands.

B-TREE-P and a few minor modifications to your existing data entry programs are all that is necessary for you to immediately be able to search, display, and browse through your data quickly and conveniently.

Modifications to your existing data files are absolutely unnecessary!

B-TREE-P
B-trees for Pick systems.

Pick is a trademark of Pick Systems.

B-TREE-P includes all necessary BASIC source code for a B-tree system that works with any file:

- Insertion subroutine
- Deletion subroutine
- Lookup subroutine
- Previous/next subroutine
- Complete instructions

Plus, you receive the source code for a complete demonstration system that uses B-TREE-P to maintain a name and address file:

Editor program for creating and changing names and addresses.
Browser program for displaying names and addresses.
Printer program for listing file items in order without having to wait for a sort.

Here's how to order:

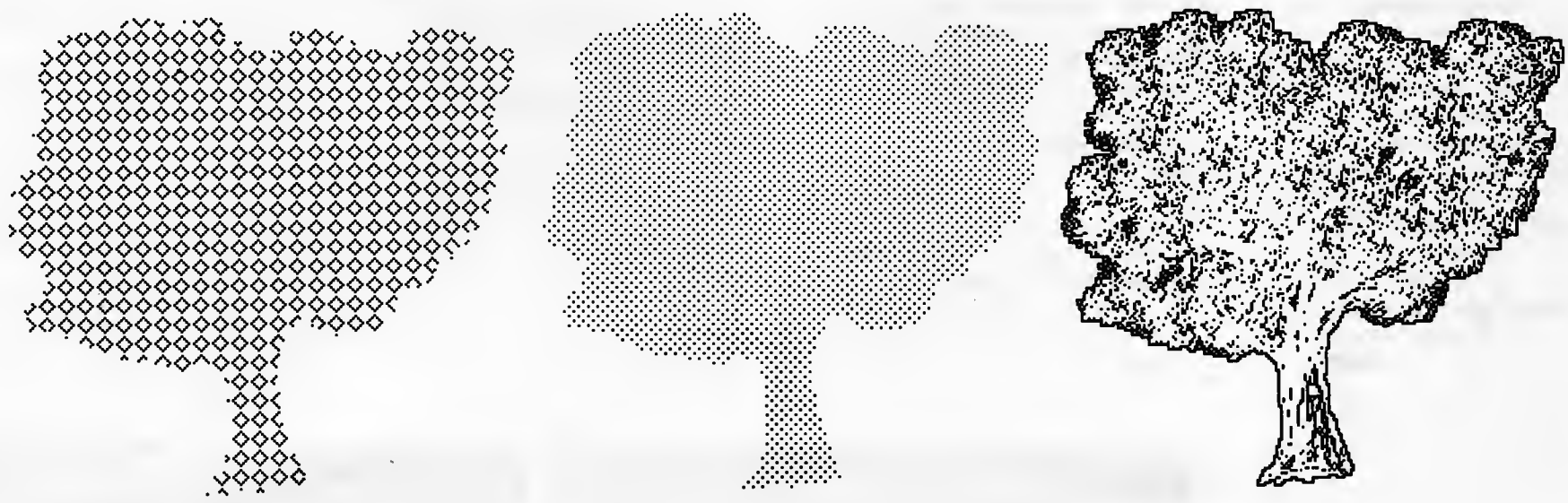
Send your name, address, telephone number, and your check for $395 payable to Semaphore Corporation to:

Semaphore Corporation
207 Granada Drive
Aptos, CA 95003

We'll send you complete B-TREE-P source code listings and all necessary documentation.

Call us at (408) 688-9200!

WARNING: B-TREE-P includes a license agreement with copy, use, and transfer restrictions limiting your use of B-TREE-P to one computer at a time. Multi-CPU and OEM resale agreements are also available.

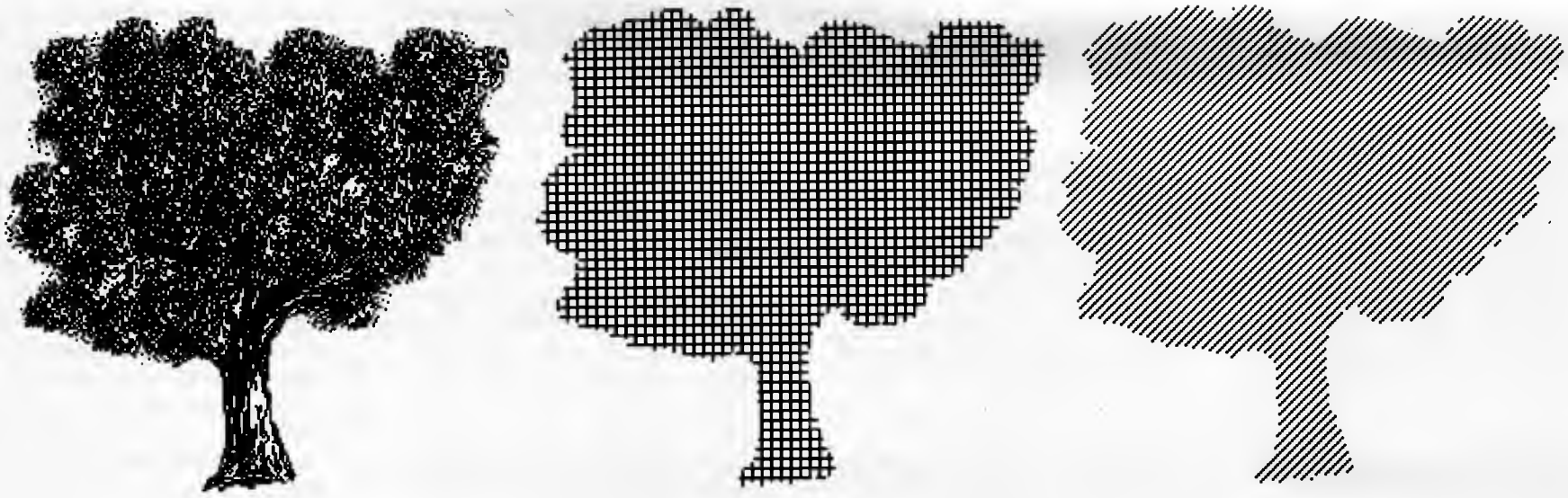


ONCE UPON A TIME, there lived a Pick™ computer user named Mike.

Every workday, from eight to five, Mike would sit in front of a terminal and type commands to make his computer produce reports. Sometimes the commands worked quickly and would make Mike's computer instantly display results. But usually Mike had to type a command that began with the dreaded words SORT or SELECT. Then the computer would take forever to process the command, and Mike would have to wait a long time before the computer could display the report.

Fortunately, Mike could stay busy while waiting for a SORT, because that's when he would always get lots of phone calls from his coworkers, who wanted to know why the displays on their terminals were suddenly slowing down to a crawl.

As each day passed, Mike got more and more bored with his slow computer.



One day, something terrible happened. Mike had just finished waiting ninety minutes for a complicated SORT, and was paging through the report on his terminal. Suddenly, Mike accidentally hit the Return key, and page four of the report flashed by before he could read it. Mike would have to do the whole SORT over again just to see page four. Mike almost had a nervous breakdown.

Fortunately, Mike pulled himself together. But Mike was mad. He just wasn't going to put up with those slow SORTs and SELECTs anymore. So Mike bought B-TREE-P.

Now Mike is very happy. He doesn't have to wait for his computer to SORT anymore. Mike can instantly find and display any data he's looking for. Even scroll forward and backward through his files. And his coworkers no longer call him, because the computer isn't sluggish anymore.

The moral of this story? Buy B-TREE-P. You'll be as happy as Mike.

B-TREE-P is a product of Semaphore Corporation, 207 Granada Drive, Aptos, CA 95003, (408) 688-9200. Pick is a trademark of Pick Systems.

Unlock The Secrets In Your Computer!

Pragma (not to be confused with *Pragma's Product Profiles*) is the original 48-page technical journal for Pick users published quarterly beginning in August 1982. Each issue is packed with software and helpful information, including complete and debugged program listings and detailed, explanatory articles for readers at all levels of experience. Order your **Pragma** issues today and begin unlocking the secrets in your Pick system!

Pragma #1: Welcome to Pragma ° ZIP Code File Design ° A Program for Renumbering States ° [illegible] ° VANILLA, The No-Frills [illegible] System: The Parts File ° Molectron User Profile ° More Memory, [illegible] ° SYSMAP, A Cross-Reference [illegible] ° 23 Wish List Items ° Computing Modulos with ENGLISH ° Build [illegible] Headings with Proc ° 4 Queries ° [illegible] Identifiers Hash Well ° Tape Handling ° Patching the Exit Problem in 3.2 SCREENPRO ° The Shell Game.

THIS ISSUE IS SOLD OUT

Pragma #2: We Have Liftoff ° A Modulo Setting Program ° Black Box Formatting ° TRIM.DELIM and PROFILE Utilities ° SYSMAP, A Cross-Reference System: File Format Input ° Galinski Hamburg User Profile ° LOOP vs. LOCATE Benchmarks ° 25 Wish List Items ° An Introduction to ENGLISH: Jargon ° Proc Conversions ° VANILLA, The No-Frills Manufacturing System: Bill of Material Input ° 14 Queries ° The Trouble Tree ° 2 Letters ° A Switchbox for 32 Ports ° Security and the DATA/BASIC Programmer ° The Cookie Game ° Some New Subscribers.

Pragma #3: Is Pragma a Rare Medium, Well Done? ° Edit Aides ° A Proc for Cross-Referencing O-Pointers ° SYSMAP, A Cross-Reference System: Remaining File Input ° Rainbow Natural Foods User Profile ° More BASIC Benchmark Comparisons ° Justifying Ragged Output ° 13 Wish List Items ° Generating Monthly Column Headings ° VANILLA, The No-Frills Manufacturing System: Purchasing ° 5 Queries ° An Introduction to ENGLISH: More Commands ° Shared Site Checklist ° Converting Paint to Programs ° 3 Letters ° Generating Blank [illegible] ° Animal, A Game That Learns ° More New Subscribers.

Pragma #4: Survey Says... ° Pacific Valley Bank User Profile ° SYSMAP, A Cross-Reference System: Dicts and Procs ° Uncompiling: Unassembling Stack Code ° Left vs. Right [illegible]cation Benchmarks ° 4 Wish List Items ° A [illegible]arison of BASIC Implementations ° More [illegible] Subscribers ° An Undocumented Editor Capability ° 3 Local User Group Reports ° Avoiding Saved Lists with PQ-RESELECT ° Self-Documenting Reports ° A Query ° A Survey of Hardware that Supports Pick-Style Software ° Printer Trade-Offs ° An Introduction to ENGLISH: Finding Files ° A Letter ° VANILLA, The No-Frills Manufacturing System: Purchase Order Entry ° The Swat! Game.

Pragma #5: Happy Birthday! ° Interactive Systems Producer Profile ° Uncompiling: Regenerating Source Code ° A Day of Revelation ° IBM Personal Computer vs. Microdata Reality Benchmarks ° VANILLA, The No-Frills Manufacturing System: Receiving ° 3 Wish List Items ° An Introduction to ENGLISH: Being Choosy ° Converting Manual Paint to Programs ° 6 Local User Group Reports ° More New Subscribers ° A Program That Reports File Pointer Locations ° Boiler Plate Processing with Runoff ° A New Query and an Old Query Answered ° SYSMAP, A Cross-Reference System: Automation ° Tape Types ° 6 Letters ° Permuted Index to the First Four Issues of Pragma ° Amazing, a Maze Game.

Pragma #6: Pick Pie Pictured ° The Ubiquitous POINTER-FILE ° Uncompiling: Resolving Labels ° An Introduction to ENGLISH: Syntax Overview ° AccuSoft Producer Profile ° Rounding Out 7 Benchmarks On 5 Machines ° Designing Data Entry Programs ° 12 Wish List Items ° GET: An Input Processor ° 5 Local User Group Reports ° More New Subscribers ° Do You Know Your Proc Limits? ° VANILLA, The No-Frills Manufacturing System: Inspection ° 2 Queries ° Individual Accounts or Shared Accounts? ° Lock Logic Illustrated ° Password Protection ° Two Undocumented Conversions ° A Letter ° How AMAZING Works.

Pragma #7: More New Subscribers ° A New Machine Visits Pragma ° Bantam Hardware Overview ° Suppressing LOCKED Clauses ° An Introduction to ENGLISH: WITH, BY and TOTAL ° Bantam Producer Profile ° VANILLA, The No-Frills Manufacturing System: Disposition ° A Bantam Diary ° New Benchmark Timings for 8 More Machines ° 6 Local User Group Reports ° GET: Source Code ° A Preprocessor for Symbolic Statement Labels ° 2 Wish List Items ° 3 Queries ° Bantam Software Overview ° A Letter ° The Slide Game.

Send $25 for each 48-page back issue to:

Pragma
207 Granada Drive
Aptos, CA 95003

each Pick site may be an arbitrary mix of all the groups, and we're more than happy to send anyone a paper or sell them software no matter who they are or how much technical expertise they have.

Your comments about standards are apparently in response to us calling the various Pick versions a Tower of Babel. Standardization can be quite useful, especially for things like magnetic media or the syntax of LOCATE statements. But licensees will probably always try to offer extra bells and whistles, as they already currently do, and treat any standard that might exist as a subset of what they want to offer the customer. We predict that good, easy "portability" will always be just out of reach, as it is now. We think Ultimate, ADDS, VMark, Cosmos, Prime, McDonnell Douglas and all the rest of the implementations will always vary enough from one another to continue the Tower of Babel tradition.

Yes, comparing Pick and Apple's (various) operating systems is unfair. That's why we didn't make any such comparison. However, you claim Pick is a much more sophisticated system. We disagree, both as users and as programmers. We think the Macintosh user interface makes Pick look archaic. As for system internals, ask one of your programmers to examine the 1200-page tome titled "Inside Macintosh" at your local bookstore. We bet you'll be told Apple has indeed put together (and documented) an extremely sophisticated product. As for Open Architecture, your letter continues an unfortunate tradition of too many words and not enough action. After all, it was exactly two years ago (!) that we published our interview with Rich Lauer of Pick Systems, who described how Open Architecture was being released to licensees the following month, that it was reasonable to assume licensee versions would "make its way to the streets sometime before the end" of 1985, and that it would "be more in the June/July [1985] timeframe before you see it on the IBM XT" from Pick Systems. We're still waiting. Instead of vast rewrites and long delays, we would be happy with a steady, ongoing effort that produces just one or two occasional, but frequent and useful, enhancements.

We did not, as you imply, blame dealers, licensees, or Pick for our inability to find out who a substantial number of Pick users are. We simply reported that phenomenon as an obstacle making it difficult for third party houses like ourselves to be attracted to the market. We also think you're overlooking the amount of subdealing happening in the Pick market. Years ago, the manufacturer's sales order and packing slip for the first machine we ever bought as a subdealer only mentioned our dealer, not us, as the sold-to and ship-to point. Now-adays, we are listed on the paperwork, but of course we resell and install the equipment at another site the manufacturer never even knows about, and that our dealer finds out about only if we mention it. Interestingly, the manufacturer requires our dealer to specify what the service organization is expected to be. That service group is then automatically notified of the sale!

Any computer system with a large enough following can support a technical journal. As we described in the interview, it was back in 1984 that it became obvious Pick just didn't have the substantial, cohesive market that was necessary for Pragma to continue in that vein, so Product Profiles was born. Although we've also published for Apple users since 1983, that periodical never has or will be a "hackers newsletter".

No, we don't feel that Pick is passing us by, or that we're confusing the Pick market with our other activities. Rather, we feel that unless Pick and its market develops the way it should, we're being

Experienced Computer Systems

If you are considering the purchase of a computer system, contact us. We usually have a variety of systems available for quick delivery. We also stock new and used disk drives, tape sub-systems, memory, communications controllers and whatever else you may require.

We also will provide useful information on the manufacturers' product line, policies and license fees.

And...we will take your existing system in trade but let you keep it during your conversion.

A TELEPHONE CALL TO US COULD SAVE YOU A PILE OF MONEY!

- **FOR PRIME:**
  Don Shifris
  11460 No. Cave Creek Rd.
  Suite 12, Phoenix, AZ 85020
  (602) 997-0997
- **FOR MICRODATA, ADDS MENTOR, GENERAL AUTOMATION ZEBRA, ULTIMATE AND OTHER PICK™ TYPE SYSTEMS:**
  Bill Cargile
  783 Old Hickory Blvd.
  Brentwood, TN 37027
  (615) 373-2570

1stsolutions INC.

forced to pass by Pick. As we stated in our interview, for now "we like the Pick system, we sell products and services based on it, and we use it within our own company. It's our system of choice for timesharing applications, because we find it efficient and easy to program". As long as that's true, we plan to continue to publish and sell to Pick users.
- Editors

CALLs vs. GOSUBs

In *Product Profiles #31*, you mention replacing CALLs with GOSUBs to speed up programs. You cite CALLs as being as much as ten times slower than GOSUBs. My own benchmarking on various Pick computers indicates CALL statements are roughly three times slower than GOSUB statements.

I find that the largest obstacle I have to tuning systems for speed is finding out what the systems are doing. Much of the code I work on is so convoluted that it is difficult to figure out what the code is doing, much less make it faster.

Brian Gulino
Encinitas, CA

The worst CALL overhead we measured was on a tiny 128K machine. One of our subscribers to BTP/Branches, a newsletter for our B-TREE-P customers, claims no discernible difference between GOSUB and CALL performance on her Sequel.

You'll like the "statement profiler" we're working on for a future issue. It's a tool for identifying where a program spends its time, to make it easy to zero in on the code worth optimizing.
- Editors

FREE Back Issues!

A few back issues of *Pragma's Product Profiles* are still available while supplies last. To receive your FREE copies, indicate which issues you need and send a stamped, self-addressed envelope to:

Pragma • 207 Granada Dr. • Aptos CA 95003

(Allow 1.5 oz. per issue to compute postage.)

Issue #10: Beyond The Power Of Pick
Issue #11: Open Architecture Status Report
Issue #12: Impressions Of The Zebra 750
Issue #15: The Wonders Of An Upgrade
Issue #17: A READ Sometimes Fails
Issue #19: Pick Book A Disappointment
Issue #21: Programming For Speed
Issue #22: How Files Grow
Issue #23: GA About To Release 3.2
Issue #24: Beyond Pick, Revisited
Issue #26: How To Find Wasted Space
Issue #27: The Myth Of Separation=
Issue #28: Is BASIC Faster Than Access?
Issue #29: How To Crunch Code
Issue #30: Semaphore Interviews Itself
Issue #31: This Month's Mailbag

Buy, Sell, Trade In and Service

PICK SPECIALISTS

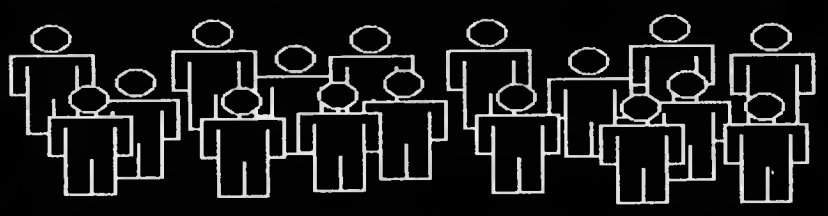
ADDS MENTOR
MICRODATA
GA ZEBRA
CIE
ULTIMATE
PRIME
PRINTRONIX
WYSE

- *New and Used Systems*
- *Peripherals and Upgrades*
- *Immediate Delivery*
- *Savings up to 60%*
- *Repair and Refurb Services*

BAYSIDE COMPUTER CORPORATION (415) 490-[illegible]33

Now available for the first time!

Our Pick™ Mailing List
CREAM of the CROP



Our 3,000 most responsive
Pick users' names and addresses.
Only $150 plus tax for one-up adhesive labels,
sorted, printed, and delivered to you.

Send no payment without first obtaining our order form and one-time use agreement.

P/Mail by Marianne
1893 Nadina Street • Seaside CA 93955

ZEBRA FOR SALE

General Automation Zebra 752

128KB memory (expandable to 640KB)
20MB disk (expandable to 120MB)
6 serial ports (expandable to 18) • 1 parallel port
5 available option slots
5MB backup cartridge drive (expandable to 1/4" tape)
12 backup cartridges • All manuals

With Pick O/S, Jet, AccuPlot,
CompuSheet, and B-TREE-P.
This is an extremely reliable, lightly used machine.

$3,900

Semaphore Corporation
207 Granada Dr. • Aptos CA 95003 • (408) 688-9200

SEMAPHORE

SEMAPHORE CORPORATION • 207 Granada Drive • Aptos, California 95003 • (408) 688-9200

Dear Pick™ user,

These fifty companies* use a Pick computer just like you do, but their computer can do some special things that your computer can't:

Long Beach Community Services • Halprin Supply Co. • Casualty Underwriters Inc. • University of California • Distributed Logic Corp. • Jet Electronics & Technology Inc. • National Center for Atmospheric Research • Trudell Trailer Sales Inc. • Stewart Co. • Computyme • Data Operating Systems Inc. • Tel-A-Train Inc. • Information Technology Consultants • Life & Health Insurance Co. of America • Flynt Systems Corp. • System Works Inc. • Miami Trading Enterprises • Generation Research • Multisystems Inc. • Infocel • Cooke Data Systems Inc. • John Klein & Assoc. Inc. • Condominium Insurance • Penn Independent Assoc. Inc. • Mark Card • Chandler Lumber Co. • Eye Care & Surgery Center • Chicago Kenworth • Wofford College • Conston Inc. • Assertive Systems • Office Works • Cornell University • City of Irvine • Excalibur Computer Systems Inc. • ADDS Inc. • Specs Music • Specialty Underwriters Inc. • Shoob Photography • May Trucking • Sierra Software Inc. • Medical Accounting Systems • AIPAC • NORPAC • Martin Cadillac Co. Inc. • Capital Software Ltd. • Oman Publishing • Reinsurance Assoc. • Hubert Distributing Co.

Their Pick computers can scroll through files, forward *or* backward, an item at a time or a page at a time, in *any* sort order. They don't have to wait for SORTs or SELECTs. They can immediately find any record in any file just by typing one or more starting characters that match *any* field in the record.

Why are these companies special? Because they purchased B-TREE-P, software for using B-trees on Pick computers. B-trees allow any of the data in any of your Pick files to be instantly located, displayed, and processed in any sort order, without having to wait for SORT or SELECT commands.

B-TREE-P and a few minor modifications to your existing data entry programs are all that is necessary for you to immediately be able to search, display, and browse through your data quickly and conveniently.
Modifications to your existing data files are absolutely unnecessary!
B-trees do *not* use inverted files, cross-reference tables, or other similar inefficient indexing schemes.

Why not join the ranks of B-TREE-P users who can instantly locate and display their data any way they want, without having to wait for endless SORTs and SELECTs? To order, just send your name, address, telephone number, and your check for $395 payable to Semaphore Corporation to the address on our letterhead. We'll send you complete B-TREE-P source code listings and all necessary documentation.

* This is not an endorsement by any of the companies listed.

B-TREE-P includes a license agreement with copy, use, and transfer restrictions, limiting your use of B-TREE-P to one computer at a time. Multi-CPU and OEM resale agreements are also available. Pick is a trademark of Pick Systems.